

Section II. REMARKS

Affirmation of Prior Election and Withdrawal of Claims 30-55

In the October 15, 2003 Office Action, the Examiner imposed a restriction requirement against claims 1-56 and required that an election be made between:

Group I: Claims 1-29 and 56, drawn to a cleaning CMP formulation, classified in class 252, subclass 79.1; and

Group II: Claims 30-55, drawn to a method for making a semiconductor, classified in class 438, subclass 706.

Applicants hereby affirm the prior provisional election made by Margaret Chappuis during a telephone conversation with Examiner Umez Eronini on August 8, 2003, electing the Group I claims 1-29 and 56.

Correspondingly, applicants acknowledge the withdrawal of non-elected claims 30-55 (Group II) from consideration, with the intent to rejoin these claims at a later time, or alternatively, with reservation of the right to file divisional application(s) directed to the subject matter of those claims if rejoinder is not effected.

Specifically, applicants intend to rejoin the withdrawn claims 30-55 when the elected product claims 1-29 and 56 (as herein amended, and as may subsequently be further amended) are determined to be allowable. Such rejoinder would be fully proper under these circumstances, for the following reasons.

When an application as originally filed discloses a product and the process for making and/or using such product, and only the claims directed to the product are presented for examination, when a product claim is found allowable, applicant may present claims directed to the process of making and/or using the patentable product for examination through the rejoinder procedure in accordance with MPEP §821.04, provided that the process claims depend from or include all the limitations of the allowed product claims.

In the present application the elected claims 1-29 and 56 are directed to CMP cleaning formulations and the non-elected withdrawn claims 30-55 are directed to a process for making and/or using said CMP cleaning formulations. The withdrawn non-elected method claims 30-55 have been amended to recite all the limitations included in the elected product claims 1-29 and 56. Consistent with the provisions of the

MPEP §821.04, when the product claims 1-29 and 56 are subsequently found allowable, the withdrawn method of use claims 30-55 may be rejoined for examination.

Applicants, therefore, request the Examiner examine the non-elected claims 30-55 when product claims 1-29 and 56 are allowed. Consistent with such intent to rejoin, method claims 30-55 are in form suitable for future examination upon their rejoinder with the allowed elected claims.

The pending claims in the application therefore are claims 1-29 and 56, as amended herein.

Amendment of Claims to Correct Typographical Errors Therein

Claims 7, 9, 17-25, 30-36, 38, 43-45, 47, 49 and 51 have been amended herein to correct minor and self-evident typographical errors.

Claim Objection

Claim 14 was objected to because it contained a typographical error. In response, applicants have amended claim 14 herein to correct such typographical error and obviate this objection. Withdrawal of this objection therefore is requested.

Allowable Subject Matter

Claims 13-16, 28 and 29 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In response, applicants acknowledge the Examiner's contingent allowance of such claims and respectfully request reconsideration of all pending claims 1-29 and 56 in light of the subsequent discussion.

Rejection of Claims and Traversal Thereof

In the September 5, 2003 Office Action:

claims 1, 4, 6, 10 and 12-17 were rejected under 35 U.S.C. §112, second paragraph;

claims 1, 2, 4-10 and 12 were rejected under 35 U.S.C. §103(a) as being unpatentable over Leon et al. (U.S. Patent No. 6,030,932);

claims 3, 11, 17-25 and 56 were rejected under 35 U.S.C. §103(a) as being unpatentable over Leon et al. in view of Schonauer et al. (U.S. Patent No. 5,662,769); and

claims 26 and 27 were rejected under 35 U.S.C. §103(a) as being unpatentable over Leon et al. in view of Schonauer et al., and further in view of Wojtczak et al. (WO 98/00244).

These rejections are traversed in application to pending claims 1-29 and 56. The various grounds of rejection are addressed in turn below.

Rejection under 35 U.S.C. §112, second paragraph

In the October 15, 2003 Office Action, claims 1, 4, 6, 10 and 12-17 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Specifically, the Examiner indicated that the “%” of the formulation is indefinite for failing to specify the units.

Accordingly, applicants have amended claims 1, 4, 6, 10 and 12-16 hereof, to recite that the percentage of the formulation is “% by weight, based on the total weight of the formulation,” thereby obviating this rejection. Support for this amendment can be found in the instant application on page 8, lines 5-6. Consistent with such amendment of claims 1, 4, 6, 10 and 12-16, claim 8 has been likewise amended.

Original claim 17 recites, *inter alia*:

“A semiconductor wafer cleaning formulation comprising the following components in the percentage by weight ranges shown, based on the total weight of such components” (emphasis added)

Because claim 17 clearly and unambiguously specifies the percentage units, claim 17 meets the requirements for clarity and precision under 35 U.S.C. §112 criteria.

Applicants respectfully request withdrawal of the §112, second paragraph rejection of claims 1, 4, 6, 10 and 12-17.

Rejection under 35 U.S.C. §103(a)

In the October 15, 2003 Office Action, claims 1, 2, 4-10 and 12 were rejected under 35 U.S.C. §103(a) as being unpatentable over Leon et al. (U.S. Patent No. 6,030,932) (hereinafter Leon '932).

Leon '932 relates to an aqueous-based, non-corrosive cleaning composition that is useful for removing photoresist, plasma etch and CMP residues from a substrate.

According to the Examiner, Leon '932 teaches cleaning compositions comprising an amine, at least one fluorine-containing compound and water. The Examiner further contends that:

"it would have been obvious to one having ordinary skill in the art at the time of the claimed invention to modify Leon by using varying concentrations of the cleaning components since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art . . . "

Applicants vigorously disagree and note that Leon '932 is not competent prior art and does not defeat the patentability of the presently claimed invention. The Leon '932 reference was filed on May 19, 1998 as a CIP of U.S. Patent Application No. 08/709,053 filed September 6, 1996, now U.S. Patent No. 5,780,406, in the name of Honda et al. (hereinafter parent application Honda '406). A review of the parent application Honda '406 reveals that the cleaning compositions disclosed therein comprise (a) water, (b) at least one hydroxylammonium compound and (c) at least one basic compound selected from the group consisting of amines and quaternary ammonium hydroxides (see Honda '406, col. 3, lines 11-30). Applicants have included a copy of Honda '406 in Appendix A for review by the Examiner and to provide evidence that the parent application Honda '406 does not disclose, teach or suggest the use of a fluorine compound. Importantly, the entire specification of parent application Honda '406 is completely devoid of any mention of cleaning compositions that include **fluorine-containing compounds**. As a matter of fact, the term fluorine, fluorinated or any description that would include a halogenated compound cannot be found in the parent application Honda '406 specification. As such, the invention disclosed in the Leon '932 patent comprising fluorine-containing compounds is NOT entitled to the September 6, 1996 filing date of the parent application Honda '406 and thus can only depend on the May 19, 1998 as the effective filing date.

It is well settled in the law that a Continuation-in-Part application is not entitled to an the priority date of a parent application if the parent specification does not enable and/or provide a written description to allow

one to practice the claims of the later filed application. The Federal Circuit addressed this very issue on January 6, 2004 and stated that:

"Claims found in a later-filed application are entitled to the filing date of an earlier application if, *inter alia*, the disclosure in the earlier application provides an adequate written description of the later filed claims under 35 U.S.C. §112. See *Tronzo v. Biomet, Inc.*, 156 F.3d 1154, 1158 (Fed. Cir. 1998) (discussing requirements of claiming benefit of priority date of earlier application under 35 U.S.C. § 120). This requires the disclosure in the earlier application to reasonably convey to one of ordinary skill in the art that the inventors possessed the later-claimed subject matter when they filed the earlier application. *Id.*; see also *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1479 (Fed. Cir. 1998) ("To fulfill the written description requirement, the patent specification 'must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed.'" (citation omitted); *Regents of the Univ. of Cal. v. Eli Lilly & Co.*, 119 F.3d 1559, 1566 (Fed. Cir. 1997) (same)." (See, *In re Curtis*, 03-1215 (Fed. Cir. 2004)).

It is clear that at the time parent application Honda '406 was filed in the PTO, the inventors did not convey to a person of ordinary skill in the art that the parent application Honda '406 inventors were in possession of a composition comprising a fluorine-containing compound. The very first mention of a fluorine-containing compound can only be found in the Leon'932 patent that has a filing date of May 19, 1998, and as such, a composition comprising a fluorine-containing compound is not entitled to the priority date of the parent application Honda '406.

Applicants' claimed invention claims priority to U.S. Patent Application No. 09/818,073 filed March 3, 2001 (the "parent application"), which in turns claims priority of U.S. Patent Application No. 08/924,021 filed August 29, 1997, now U.S. Patent No. 6,224,785 in the name of Wojtczak et al. (hereinafter the "grandparent application").¹

Applicants respectfully remind the Examiner that, as stated above, a claim in a CIP application is entitled to the filing date of the parent application when the claimed invention is described in the parent specification in a manner that satisfies, *inter alia*, the description requirement of 35 U.S.C. §112. *Id.*

A review of the parent and grandparent applications show that applicants were in possession of the presently claimed invention as of the August 29, 1997 filing date of the grandparent application. For example, the grandparent application recites:

¹ Wojtczak '785 claims priority to two earlier filed provisional applications.

- “The formulations contain ammonium fluoride or a derivative of ammonium fluoride, an amine or mixture of amines, water, and optionally, one or more metal chelating agents.” (see Wojtczak `785, col. 2, lines 12-15 and lines 20-24. See also, Wojtczak `785, col. 1, lines 39-43).
- “The combination of ammonium fluoride or a substituted fluoride source as identified above with an amine (other than as a surfactant in an amount of 1% or less) provides better stripping performance with less corrosivity than formulations containing ammonium fluoride without amines and formulations containing amines without ammonium fluoride.” (see Wojtczak `785, col. 2, lines 56-62).

The parent application recites:

- “The formulations advantageously contain (i) a fluoride source, such as ammonium fluoride and/or derivative(s) of ammonium fluoride, (ii) an amine or mixture of amines, (iii) a nitrogen-containing carboxylic acid or imine, (iv) water, and, optionally and preferably, (v) one or more metal chelating agents.” (see U.S. Patent Application Publication No. 2001/0050350, paragraph [0026]).

Applicants are entitled to claim priority to both of the listed prior applications because it is clear that there is a continuing disclosure through the chain of applications, without hiatus. *Eiselstein v. Frank*, 34 USPQ 2d 1467 (Fed. Cir. 1995) (citing *Lemelson v. TRW, Inc.*, 225 USPQ 697 (Fed. Cir. 1985)). Thus, applicants are entitled to the filing date of the grandparent application, U.S. Patent Application No. 08/924,021 filed August 29, 1997, now U.S. Patent No. 6,224,785.

Moreover, the disclosures of both the grandparent application, U.S. Patent Application No. 08/924,021 filed on August 29, 1997, and the parent application, U.S. Patent Application No. 09/818,073 filed March 3, 2001, meet all requirements under 35 U. S. C. 112 for the disclosure of a composition containing fluorine-containing compounds. It is well settled in the law that for a prior application to meet the “written description” requirement with respect to later-filed claims, the prior application need not describe the claimed subject matter in exactly the same terms as used in the claims; it must simply indicate to persons skilled in the art that as of the earlier date the applicant had invented what is now claimed. *Vas-Cath Inc. v. Mahurkar*, 19, USPQ 2d 1111, (Fed. Cir. 1991); See, *In re Wertheim*, 191 USPQ 90 (CCPA 1976) (“[L]ack of literal support . . . is not enough . . . to support a rejection under Section 112.”) The test is whether the disclosure of the application relied upon reasonably conveys to a person skilled in the art that the inventor had possession of the claimed subject matter at the time of the earlier filing date. *Ralston Purina Co. v. Far-Mar-Co, Inc.*, 227 USPQ 177 (Fed. Cir. 1985). Clearly, applicants’ grandparent and parent applications not only meet this criteria but in fact far extend beyond this threshold

standard because both applications expressly define that the compositions contain a fluorine-containing compound. It is clear that applicants were in possession of the presently claimed invention - a post CMP cleaning formulation comprising an organic amine, a fluoride source and water - as of the filing date of the grandparent application.

Accordingly, applicants' claim 1, and claims 2, 4-10 and 12 dependent thereunder, have the benefit of the August 29, 1997 priority date of the grandparent application.

Considered *in toto*, Leon '932 is not considered competent prior art to applicants' claims 1, 2, 4-10 and 12. Accordingly, withdrawal of the §103 rejection of claims 1, 2, 4-10 and 12 as being obvious over Leon '932 is respectfully requested.

In the October 15, 2003 Office Action, claims 3, 11, 17-27 and 56 were rejected under 35 U.S.C. §103(a) as being unpatentable over Leon '932 in view of various secondary and tertiary references, including:

- (1) a rejection of claims 3, 11, 17-25 and 56 under §103(a) over Leon '932 in view of Schonauer et al. (U.S. Patent No. 5,662,769) (hereinafter Schonauer '769);
- (2) a rejection of claims 26 and 27 under §103(a) over Leon '932 in view of Schonauer '769, and further in view of Wojtczak et al. (WO 98/00244).

The various rejections of the pending claims are traversed and reconsideration of the patentability of the claims is requested.

As discussed hereinabove, Leon '932 is not considered competent prior art to applicants' claim 1, upon which claims 3 and 11 indirectly depend. The foregoing remarks regarding the disqualification of Leon '932 as competent prior art of applicants' claim 1, and claims 2, 4-10 and 12 dependent thereunder, are equally applicable to claim 17, and claims 18-27 dependent thereunder, and claim 56. With the failure of the Leon '932 reference as competent prior art, the rejections depend solely on the secondary and tertiary references that fail to teach or suggest applicants' claimed invention.

The secondary and tertiary references have been cited only for teaching the isolated nitrogenous component and the metal chelating agent of the formula X-CHR-Y, respectively, with which the Examiner proposed would have been obvious to combine with the Leon '932 formulation. However,

without the primary Leon '932 reference, the secondary and tertiary references wholly fail to provide any basis for rejection of the claims under the obviousness criteria of 35 U.S.C. §103(a).

Accordingly, applicants request the Examiner reconsider the §103 rejections in light of the foregoing remarks, and on reconsideration withdraw the rejection of claims 3, 11, 17-27 and 56.

Section III. CONCLUSION

Applicants have satisfied all the requirements for patentability. All pending claims are free of the art and fully comply with the requirements of 35 U.S.C. §112. It therefore is requested that Examiner Umez Eronini reconsider the patentability of claims 1-29 and 56 in light of the distinguishing remarks herein and withdraw all rejections, thereby placing the application in condition for allowance. Notice of the same is earnestly solicited. Applicants request that withdrawn claim 30-55 be rejoined and examined at this time. In the event that any issues remain, Examiner Umez Eronini is requested to contact the undersigned attorney at (919) 419-9350 to resolve same.

Respectfully submitted,



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